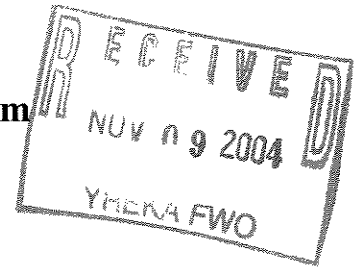


**Salmon River Restoration Council
Salmon River Community Restoration Program
Agreement # 113334G008
Project Number: 2004-PC-05
Final Report**



Period Covered 10/1/03– 09/30/04 Report Date November 8, 2004

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Program Coordinator: Petey Brucker

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DATE APPROVED _____ INITIAL _____
DATE FILED _____ INITIAL _____

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A) ABSTRACT/EXECUTIVE SUMMARY

The Salmon River Restoration Council (SRRC) has performed the tasks identified in our cooperative agreement for the Salmon River Community Restoration Program (CRP) for fiscal year 2004 (FY 04). During FY 04 the SRRC continued to enlist community members and other stakeholders in a variety of watershed restoration and protection CRP activities related to Coordination and Cooperation, Assessment and Planning, Implementation, Tracking and Monitoring, Evaluating and Reporting, Adaptive Management and Support Development.

The SRRC's annual Community Restoration Work Plan (Work Plan) and the associated three year funding strategy were adopted in the February 2004 Board of Directors meeting. The Salmon River Subbasin Restoration Strategy (Strategy) was completed by the SRRC, US Forest Service, and other cooperators in June of 2002. We have updated the action matrix and are sending this Strategy to the Forest Service for review and further input. The SRRC's Work Plan, which the SRRC has created each year since 1994, is included as a component of the Strategy to help facilitate and guide the SRRC in watershed and fisheries recovery. These documents compliment each other.

As directed in these planning documents, the SRRC continues to expand its role in fostering several focus groups to address key limiting factors for anadromous fisheries and related resources in the Salmon River Subbasin. These coordinated resource restoration and management focus groups are made up of diverse stakeholder participation and include: the Klamath/Salmon Learning and Understanding Group focusing on general oversight of restoration, the Klamath/Salmon Collaborative Work Group (a partnership between SRRC, the Karuk Tribe, and the Mid Klamath Watershed Council), the Salmon River Fish Work Group focusing on assessing run health of various anadromous species, **Salmon River Voluntary Spring Chinook Recovery Work Group**, Water and Restoration Monitoring Work Group, Salmon River Fire Safe Council, Salmon River and Mid Klamath Noxious Weed Work Groups, and Roads Management and Fish Passage Work Groups. We are beginning to form focus groups to work on issues and restoration opportunities related to mining (recreation suction dredging) and timber management. The SRRC is an active associate member of the Klamath Basin Fisheries Restoration Task Force's Technical Work Group. We coordinate the Mid Klamath and Salmon River Anglers and Guides Association.

During CRP-2004, the SRRC held its annual series of Ecosystem Awareness Workshops, Volunteer Training Workdays and Field Trips in the Salmon River subbasin that continued to broaden the awareness and increase the commitment of the Salmon River community and associated stakeholders. Several activities were born out of the Strategy/Work Plan and the coordinated resource management/restoration processes. These Workshops, Workdays, Field Trips and/or coordination meetings were associated with 1) Watershed/Anadromous Fisheries Education, Protection and Assessment, highlighting the Klamath/Salmon River Spring Chinook Voluntary Recovery Program- including a Draft Limiting Factors Analysis; 2) Fire and Fuels

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Coordination, Education, Planning, Prescription Development & Treatment; 3) Native Plant Awareness and Noxious Weed Coordination and Control – 13 Steps to Recovery, 4) Watershed Education Program in the river schools, 5) Transportation System Planning and Road Stewardship, 6) Fish Barrier Assessment and Restoration Coordination, 7) Salmon River Restoration Planning and Coordination for Aquatic and Terrestrial Resources, 8) River Clean-up, and 9) Watershed Monitoring – A) Water Quality and Quantity: Water temperature, Flows and Turbidity monitoring, monitor fish refugia and life history patterns, and B) Restoration and Land Management Monitoring. Announcements and invitations to these events were made by the SRRC via the activity mailers, town bulletin boards, monthly calendar, web site, SRRC staff and board meetings, announcements at other community and stakeholder meetings/events, and word of mouth. The SRRC staff and community volunteers attended Conferences and provided Presentations, Poster Boards, and Handout Materials at several of the attended conferences/symposiums.

Through the CRP, the SRRC has increased stakeholder awareness and trained numerous Community Members in restoration management skills. This has led to the development, funding implementation, and monitoring for several prioritized projects needed to recover the Salmon River ecosystem. During our annual series of Ecosystem Awareness Workshops, Volunteers Restoration Training Workdays, and Investigative Field Trips a cooperative local forum was provided where community members, agency personnel, tribal representatives, resource specialists and users and the general public interacted through information exchange, open discussion and on-the-ground training in diverse watershed rehabilitation, protection, and monitoring and inventory projects. Various agencies, tribes, private specialists, schools, universities and other donors contributed invaluable technical assistance, knowledge, and support to the SRRC's Community Restoration Program. Community cooperation and support has expanded, which compliments SRRC's work in bringing together the various stakeholders to prioritize and implement restoration activities needed for watershed recovery, highlighting the anadromous fisheries resources. During FY04 the Salmon River Community Restoration Program continued to expand its work in part by hosting or co-hosting 109 restoration training or monitoring Workshops, Workdays, or Fieldtrips, 41 planning and committee meetings, made 30 presentations, and participated in 13 conferences, symposiums or government hearings. Volunteer support for this agreement and the matching Fish and Game agreements during FY 04 by staff, community members and others is valued at \$64,134.72. This dedication demonstrates not only strong local support for our efforts, but that we are making a real contribution toward the recovery of the Salmon River ecosystems (See CRP 04 Final Data.xls / Volunteer support).

B) INTRODUCTION

In the Salmon River subbasin the Salmon River Restoration Council (SRRC) has continued to provide leadership in heightening stakeholder awareness and enlisting support from all of the stakeholders to help recover the anadromous fisheries and their related resources. The SRRC's mission is to assess, protect, restore, and maintain the Salmon River ecosystems, focusing on the restoration of the anadromous fisheries resources. This is being accomplished through diversification of the local economic base, highlighting restoration and by improving

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communication and cooperation between the local community, academia, managing agencies, Native American tribes, resource users, academia, the general public, and others.

Since 1992, the SRRC has planned, implemented, and monitored an annual series of cooperative Ecosystem Awareness Workshops, Volunteer Training Workdays, and related Investigative Field Trips. Community members, staff, resource users, technical assistants, and others have contributed over 8,154 volunteer days (65,232 hours) associated with planning, implementation and monitoring of more than 614 SRRC sponsored Workshops, Workdays and Field Trips. These activities have helped to increase coordination and cooperation between all of the stakeholders. SRRC focuses on ways to identify and reduce negative impacts, connected to various resource uses that are being identified and utilized in areas such as: fishing, mining, forest management, grazing, recreation, road management, recreation, and residential use. These planned activities have served as a springboard for the stakeholders in their development of cooperative prioritized projects and the SRRC Program areas.

SRRC Cooperative Programs

Fisheries Management

As part of its Fisheries Program, the SRRC has enlisted over 29 different community members and others to volunteer in participating in agency/tribal fisheries assessment surveys for Spring and Fall Chinook Salmon, Coho, Summer and Winter Steelhead, and more recently Lamprey and Green Sturgeon (See CRP 04 Final Data.xls / Fish Survey / Fish Survey Vol). Several community members are well trained and work on fisheries surveys to identify, assess and monitor migration barriers, fish presence and absence, adult in-river migrations and spawning patterns, juvenile out migration patterns, and fish health. The SRRC has worked with various cooperators to prevent and monitor fish kills, and participated in the Klamath Basin Fish Health Assessment Team (KBFHAT). Fisheries habitat and water quality and quantity monitoring are related activities performed by the SRRC et al. The SRRC continues to expand the role of stakeholder focus groups to identify the limiting factors for the anadromous fisheries and to prescribe and implement recovery actions (See the list of focus work groups above). The SRRC contributed resources to radio telemetry adult migration work for Spring and Fall Chinook, Coho and Green Sturgeon that are associated with the Salmon River. Key to the success of these activities has been the inclusion of numerous members of the fishing community, both tribal and non-tribal. Their experiential knowledge and connection to the resource is essential to the SRRC in accomplishing its work. The SRRC continues to coordinate activities associated with the Klamath/Salmon River Anglers and Guides Association. The fishing community is participating in monitoring activities, such as taking scale samples and other information. This has helped lead the SRRC and its cooperators to the development and implementation of the Weak Stocks Recovery Program to insure that adequate attention is given to runs that are currently at risk.

Forestry, Fire and Fuels Management

Through its Forestry, Fire and Fuels Management Program the SRRC has increased awareness and cooperation to address needs associated with these topic areas within the Salmon River

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community and their related stakeholders. The SRRC continues to expand its work through the coordination of strategic planning, education, implementation and monitoring of forestry, fire and fuels management on private, private/public interface and on public landscapes. The Salmon River Fire Safe Council (FSC), composed of the primary stakeholders, has been working on a strategic plan that identifies and prioritizes coordination, planning, education, prevention, grounds treatments, monitoring and funding actions needed to address problems. The SRRC coordinates the FSC activities. The planning includes an approach at various scales, which focuses both on problems at the landscape or Subbasin level and also addresses needs at the project or site level. Several miles of critical emergency access have been prioritized and treated on private and public lands. To date the SRRC has implemented prioritized treatments on approximately over 100 private parcels and has secured approximately \$407,500 to accomplish this work. The FSC has created strategic plans for three private parcels and one community, and are working on plans for the other two communities (Forks and Cecilville). These serve as a template for developing strategic plans on all of the other properties and their public interface zones throughout the Salmon River Subbasin. Some focus implementation groundwork activities include: reducing fuels in high priority areas (residence/businesses, emergency access and sensitive resources), creating safe fire management zones/corridors for use in prescribed burning and for suppression activities, improving access to water for fire and fuels management, insuring the availability of water for response to fire, providing critical assessment and information for fire fighting forces, and developing educational and prevention tools and information to increase awareness and cooperation. The local schools have produced numerous educational posters that are being displayed at public places to increase fire safe awareness. These and other actions are seen as essential for reintroducing natural fire, a key goal of the FSC, in a safer manner into the Salmon River Ecosystem.

Roads Management

The SRRC has continued to increase our work in the Roads Management Program. Through work accomplished in large part by the SRRC Staff and Project Crews, all (over 1,000 miles) of the federal roads within the Salmon River Subbasin have been assessed for their risk of potential sediment delivery to the aquatic habitats. The SRRC and its cooperators used GPS and GIS technologies. Land managers are using this assessment to help prioritize road restoration needs and in the creation of projects and proposals throughout the Salmon River. The roads work group helps coordinate these efforts as well as expand coordinated activities in education, support, monitoring, and funding for the needed roads restoration efforts. The USFS, with support from the California Department of Fish and Game (Department) secured over \$ 3,000,000 to address prioritized road restoration actions in the Lower South Fork Watershed. Over 60% of the perched sediment associated with roads in the Lower South Fork is being addressed. A key element of this Program has been to foster road stewardship by the local residents and landowners that use the roads risk assessments in the planning and implementing light maintenance measures (clean culverts and ditches, etc), participating in a roads needs assessment, and checking roads and repairing drainage problems during major storm events. This leads to the prevention of small, medium, and large road failures.

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Noxious Weed Management

There are many examples nation-wide of the degradation that noxious weeds can cause when left unattended. In 1994 the SRRC launched a program to manage prioritized noxious weeds, due to the threat posed by aggressive invasive plants species entering the watershed and the perceived need by federal, state and county managers to rely on herbicides, which also threaten the health of the watershed and its inhabitants, as the primary treatment. An expanding group of community restorationists have been dedicated to preventing this degradation, by safely and effectively controlling prioritized noxious weeds before they spread, without relying on the use of herbicides. The Karuk tribe and the Salmon River community have resolutions and surveys which oppose the use of chemical herbicides/pesticides by land managers. By using an inclusive inter-disciplinary approach, we believe that there is a high potential for the Salmon River Cooperative Noxious Weed Program to succeed. To provide guidance, the SRRC has developed a multi-faceted detailed collaborative strategy or action plan to promote the management of noxious weeds in a manner that highlights the recovery of healthy native plant communities, contributing to watershed recovery and improving conditions for all the inhabitants of the Salmon River Wildland Ecosystem as a whole. Monitoring results for the 2004 field season indicate that the spotted and diffuse knapweed are moving towards eradication at an astoundingly successful rate in the Salmon River. This effort is being widely recognized as a model for other areas. The success is largely due to ability of the SRRC to involve all stakeholders, highlighting community members and other resource users and managers. The SRRC participates in the Siskiyou County Weed Management Area (WMA) and has formed the Salmon River/Mid Klamath Subbasin Weed Management Group to tier to the WMA's. In addition the SRRC is promoting the development of consistent effectiveness monitoring throughout the Klamath/Siskiyou Bioregion of Northern California and Southern Oregon.

Monitoring

The SRRC, in coordination with its various cooperators, have been monitoring watershed conditions and restoration work for several years. In July of 2002, the SRRC enlisted stakeholders to create a formal committee for monitoring. The SRRC is working closely and assisting the North Coast Regional Water Quality Control Board in the development of the Total Maximum Daily Load process for the Salmon River. The conditions of the watershed monitored include: water temperature, water flows, turbidity, various species/runs of fish habitats, fish barriers, and sediment sources. The SRRC tracks its restoration work in various ways: through the SRRC annual work plan development and review, restoration project reports, photo points, databases, etc. Watershed conditions and fisheries surveys are used in monitoring for effectiveness, when applicable. We are currently compiling a comprehensive data base and display products to identify all of the restoration actions that have occurred through the Salmon River Subbasin by all of the key stakeholders (See CRP 04 Final Data.xls / Accomplishments). SRRC Project Staff provided a Salmon River update to the KRIS Program, which is now available through the Internet.

Watershed Education

For the last twelve years the SRRC's has promoted and coordinated a Watershed Education Program centered in the local elementary schools. The teachers and SRRC staff develop an annual work plan each year prior to the school year commencing. The Core Program tiers to

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various educational guides and includes: anadromous fisheries surveys, salmonid aquarium incubation, water monitoring, macro-invertebrate sampling, native and invasive plant management, and general education and awareness in various fields (fire, roads, wildlife, water use, etc.) The SRRC helps facilitate an annual Watershed Fair, in which the students, teachers, and local organizations articulate their restoration work in each year. The SRRC Project Staff develops Watershed ED activities that are incorporated into the schools required curriculum, offering specific activities that meet state standards and guidelines.

C) DESCRIPTION OF STUDY AREA

Overview

The Salmon River is one of the most biologically intact watersheds in the west. Within the lower Klamath watershed, the Salmon River remains the most pristine tributary; it has a natural, unregulated hydrograph, no significant diversions, and limited agricultural activity. Although it is not well documented, runs of all the remaining anadromous fishes in the Klamath watershed occur in the Salmon River (Moyle et al 1995, Moyle 2002). It is the largest cold-water contributor to the Klamath River, and known as one of the cleanest rivers in the state of California. This 751 sq. mile watershed is entirely within the Klamath National Forest and is considered a key watershed by the Forest Service. Watershed analysis has been completed for the entire Subbasin, with the exception of Wooley Creek. The land base in the watershed includes: 98% Public Lands-USFS with 45% in wilderness, and 67% Karuk Ancestral Lands. Four communities lie widely dispersed within this watershed. There are approximately 250 year round and 100 part time residents in the subbasin.

The Salmon River's unique characteristics stem from its mountainous terrain and public ownership of land. At 750 mi², the Salmon River is the smallest of the four major tributary watersheds in the Klamath basin. Even so, the annual runoff from the Salmon is twice that of the Scott and 10 times as great as that of the Shasta River. High runoff reflects the steep slopes and high annual precipitation (50 in) of the watershed. Runoff in the basin is dominated by a winter pulse associated with high rainfall and a spring snowmelt pulse from April through June. During summer and late fall, low-flow conditions predominate, particularly in smaller tributaries.

The Salmon River is documented as having an area in the Russian Wilderness that is one of the most diverse areas for conifer species on Earth. It has long been known for its exceptionally high quality waters, and the entire river corridor and some tributaries are designated under the Wild and Scenic Act for the outstanding fisheries resources. The Salmon River is the home to several species of fish that are thought to be at risk: Spring and Fall Chinook Salmon, Coho Salmon, Green Sturgeon and Summer and Winter runs of wild Klamath Mountains Province Steelhead. The Klamath National Forest's Land and Resource Management Plan identifies the Salmon River as being the system with the most amount of available anadromous fisheries habitat in the Klamath. The Salmon River is recognized as a key refuge for Wild Spring Chinook in the Klamath Basin and has the largest wild run in the Klamath Basin. Wooley Creek is world renowned for its exceptional water quality, which runs almost exclusively from the Marble Mountains Wilderness, in the heart of the Klamath Knot. The salmon migrating in the hotter and lower water flows in the Klamath River during summer months rely on the cooler and cleaner waters contributed by the Salmon River. See Community Restoration Plan (Appendix 1) for

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Details.

The following is excerpted from the NAS Final Report in 2004 regarding the Salmon River: "Because the Salmon River watershed is owned principally by the federal government, there has been comparatively little controversy surrounding management and restoration efforts within the basin. A small but growing stakeholder group is cooperating with state and federal agencies and tribal interests in the Salmon River basin. High priority has been placed on monitoring of salmon and steelhead runs, improvements in riparian habitat, management of fuels, and assessment and rehabilitation of logging roads (Elder et al. 2002). Given proper funding and agency participation, these efforts may be sufficient to improve conditions for coho and other salmon and steelhead in the watershed."

D) METHODS, RESULTS AND DISCUSSION

- **Ecosystem Awareness Workshops and Volunteer Training Restoration Workdays**

The SRRC has performed the tasks identified in our cooperative agreement for Salmon River Community Restoration Program for FY 04. The SRRC continues to broaden the awareness and increase community member's commitment in a variety of watershed and fisheries restoration and protection activities. In FY 04, the SRRC held 109 Ecosystem Awareness Workshops and Volunteer Training Workdays, field trips and trainings in the Salmon River subbasin that focused on understanding factors that limit and promote healthy anadromous fish production and watershed health (See CRP 04 Final Data.xls / Total Workshops Days Trainings). 16 of these activities were attributed to CRP FY 04 and the matching California Dept. of Fish And Game organizational grants for the grant period (See CRP 04 Final Data.xls / In Kind Workshops/Days Trainings). In accomplishing these tasks the SRRC brings the various key technical and experiential experts from the agencies, tribes, academia, resource users, residents and others together to share knowledge and skills between each other, with community members and other interested parties.

- **Outreach Program**

The SRRC expanded public awareness of the watershed conditions, restoration needs, and restoration accomplishments by distributing and/or posting announcements and information at key locations that serve as local community information distribution points. These local points are at the Forks of Salmon Post Office, Forks of Salmon Store, Cecilville Store, Sawyers Bar Post Office, Sawyers Bar Town Hall Information Board, and the Salmon River Watershed Center Information Board. Notices and informational announcements have also been posted at public bulletin boards in Somes Bar, Orleans, Happy Camp, Etna, Fort Jones, and Callahan. Periodic updates of the SRRC's and other stakeholder's progress were provided to the Fish and Wildlife Service throughout the year. Various SRRC updates were provided to our Board of Directors, the community and other stakeholders including newsletters circulated periodically, the monthly "River Rumors" Community Calendar, resource related brochures, and updating the SRRC web site. In reaching out to the community, resource users, the agencies, funding resources and government representatives, the SRRC held various field trips and gave several presentations to provide a general overview of the conditions and problems associated with the

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watershed and presenting specific programs that the SRRC and community implement to protect and restore the watershed health in the Salmon River subbasin. The SRRC provided information related to the Salmon River Community Restoration Program that was utilized in newspaper inserts that were cooperatively developed and circulated in the Humboldt County area. The newspaper insert was on Fire and Fire Prevention Awareness and homeowner protection. There were an estimated 15,000 inserts circulated throughout the region.

- **Support for School's Watershed Education Programs**

During FY 04, SRRC continued to support the 2 schools' Watershed Education Programs by facilitating curriculum planning, providing data gathering technicians, providing technical assistance trainings, and coordination of various activities. The SRRC is helping to incorporate the California Educational Standards and Guidelines into this Program in the schools. This helps the schools realize how watershed/fisheries education can be and is a vital part of accomplishing their curriculum requirements. In the 23 Watershed Education events during FY 04, 22 community volunteers were enlisted (See CRP 04 Final Data/Vol WS Ed).

- **FY 04 Board and Staff Planning and Evaluation Meetings**

During the planning meetings the community members, key agency specialists, Karuk Tribe of California personnel, key resource users and others participated in planning, implementing and evaluating the SRRC's Annual Work Plan, various Programs, Ecosystem Awareness Workshops, Restoration Training Workdays, Project Proposals or other SRRC restoration activities. Notices for the board meetings were mailed and posted on all key community bulletin boards. Notifications of these activities were also provided in the monthly calendar and in specific poster/announcements. Several planning meetings occurred for specific coordinated resource management planning groups such as the Fire Safe Council or the Voluntary Spring Chinook Recovery Group. The SRRC holds regular staff meetings to assist in our review and planning needs. There was a total of 40 of these meetings and 23 were attributed to CRP FY 04 and the matching California Dept. of Fish and Game organizational support grants for the grant period.

- **Subbasin/Community Restoration Planning**

SRRC reviewed and updated its Salmon River Community Restoration Plan. The Plan focuses on accomplishing associated Tasks in areas such as: Ecosystem Planning and Coordination, Education, Aquatic Ecosystem Protection and Restoration, Terrestrial Ecosystem Protection and Restoration, Ecosystem Assessment and Monitoring. This Work Plan is used as an annual guide for the staff in achieving long and short range Goals identified by the Board, and the general community. It will be updated at least every year as new information, opportunities, or directions arise (See Appendix #1 - 2004 Revised Community Restoration Plan & Three Year Work Plan).

- **Partnership Building**

As directed in these planning documents the SRRC has expanded its role in fostering several focus groups to address key limiting factors for anadromous fisheries and related resources in the Salmon River Subbasin. These coordinated resource restoration and management focus

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groups made up of diverse stakeholder participation include: the Salmon River Fire Safe Council, Spring Chinook Volunteer Recovery Work Group and Multi-Species Fisheries Technical Work Groups, Salmon River Watershed Monitoring Committee, Salmon River Noxious Weed Program Management Groups, Klamath/Salmon Guides and Anglers Association, Roads Restoration and Barrier Removal Group. These diverse stakeholder committees augment SRRC's oversight effort with the Lower Mid Klamath Subbasin and stakeholders known as the Klamath Salmon Learning and Understanding Group or (K-SLUG).

The SRRC coordinates its work and enlists cooperation and support for watershed/fisheries recovery from several managing entities including the: United States: Forest Service – Six Rivers and Klamath National Forests, Fish and Wildlife Service, and National Marine Fisheries Service; California: Department of Fish and Game, Department of Forestry and Fire, North Coast Regional Water Quality Control Board; Siskiyou County: Resource Advisory Council, Office of Education, Road Department, and Office of Environmental Planning; Karuk Tribe; Local schools and Universities; Resource User (Highlighting involvement from the Fishing Community); Environmental Groups, the general public and others.

Through the CRP the SRRC has drawn stakeholders into a collaborative process to identify, implement and monitor restoration measures necessary to help the Salmon River Subbasin and its anadromous fisheries. We believe that engaging the citizenry at the community level to become responsible stewards is essential to watershed/fisheries recovery.

During our annual series of Ecosystem Awareness Workshops, Volunteers Restoration Training Workdays, and Investigative Field Trips, a cooperative local forum was provided where community members, agency personnel, tribal representatives, resource specialists and users and the general public interacted through information exchange, open discussion and on-the-ground training in diverse watershed rehabilitation, protection, and monitoring and inventory projects. During FY04 the Salmon River Community Restoration Program continued to expand its work in part by hosting or co-hosting 109 restoration training or monitoring Workshops, Workdays, or Fieldtrips, 41 planning and committee meetings, made 30 presentations, and participated in 13 conferences, symposiums or government hearings. Volunteer support specifically for this agreement by staff, community members and others during FY 04 was valued at \$19,981. This dedication demonstrates not only strong local support for our efforts, but that we are making a real contribution toward the recovery of the Salmon River ecosystems (See CRP 04 Final Data.xls).

We staffed the Salmon River Watershed Center in Sawyers Bar, usually 5 days a week (except during holidays). We've finalized our Work Plan for the Year 2004 that is part of the SRRC's Community Restoration Plan. We enlisted community participation in the local schools Watershed Education Program activities such as: removing water-monitoring equipment, fall Chinook spawning surveys with students and assisting in salmon incubator

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project. The SRRC continued to expand stakeholder advisory partnerships, both formal and informal. Various forms of communication involving restoration and fisheries protection occurred between the SRRC and several responsible agencies and organizations, including: the Karuk Tribe of California, US Fish and Wildlife Service, US Forest Service, California Department of Fish and Game, North Coast Regional Quality Control Board, California Exotic Pest Plant Council, and specific resource user groups. As part of its Outreach Program, the SRRC developed and distributed information through presentations, monthly community calendars, and handouts. We published a General Newsletter in August, and are regularly updating a SRRC Web Site. The SRRC developed and was funded for several restoration proposals this period.

We have also provided technical and other forms of assistance to various watershed related groups in the area. We have assisted the Mid Klamath Watershed Council in their work in the Mid Klamath Subbasin.

• Project Development

Through the Salmon River Subbasin Restoration Strategy, the SRRC Community Restoration Plan and the 3-Year Work plan, and other management documents the SRRC has identified key projects and project areas or Programs that need support. The SRRC Coordinators worked with specialists from the stakeholder entities in the development of a number of restoration proposals. In addition to submitting eight proposals in FY 2004 to Klamath River Fisheries Restoration Task Force, the SRRC submitted sixteen other restoration proposals to various funders such as: Grant Clearinghouse/ National Fire Plan (2), California Dept. of Fish and Game (8), McConnell Foundation (1), Siskiyou Resource Advisory Committee (3), National Fish and Wildlife Fund (1), Environmental Science Research Institute (1). The CRP utilizes the large amount of in-kind volunteer contribution largely from community members and resource specialists to help develop and accomplish projects that are prioritized.

• Personnel

There were approximately thirty full and/or part time SRRC staff that provide implementation, coordination, and administrative services that are related to the SRRC's work in FY 04. There are other community participants who assist in project coordination. SRRC Staff attended all of the planning meetings for which they will be compensated through their salary. In FY-04 the Staff was paid \$159,595.75 for 11,902.75 hours of work, and volunteered services valued at \$82,679.64 including benefits. Of the total staff days for the grant period, over 33% were volunteered. For CRP FY 04 and the matching agreements this percentage is much higher (See CRP 04 Final Data.xls / Staff Hours).

• Technical Assistance

During FY 04 the SRRC received a broad range of technical support from key agency and University personnel, Tribal representatives, and private specialists at several planned Workshops and Workdays, restoration projects and other events. Support from these non-federal sources totaled 235.5 hours and is valued at \$2,730, of which \$620 was attributed to CRP FY04. Support from federal sources totaled 106 hours and is valued at \$2,120 (See CRP 04 Final Data.xls / Technical Support).

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In addition, we received extensive technical assistance for our computer and Geographic Information Systems project, for initiation of a subbasin-wide private landowner inventory, tracking restoration work, for proposal development, and for general computer assistance.

The SRRC continued to expand its comprehensive Geographic Information System (GIS) that utilizes data from the Klamath National Forest and from other sources. The SRRC works in conjunction with technicians from the Klamath Resource Information System (KRIS) updating Salmon River Subbasin sections of KRIS. The SRRC has continued to track such characteristics as: unstable soils and roads, denuded riparian and up-slope habitats, fuels loading associated with private dwellings and opportunities for fuel breaks, native and noxious plant species populations, areas of the river used by anadromous fish species, river cleanup information, SRRC's and other stakeholder restoration sites, and other information.

- **Conferences/Workshops/Presentations**

During FY 04 SRRC staff and other community members attended and participated in a variety of workshops to increase stakeholder awareness of restoration problems and solutions in the Salmon River Subbasin. The SRRC staff has developed expertise in various fields that were articulated in these workshops, presentation, and at conferences. This has helped others in the region, nation, and world understand the high resource value and restoration needs and actions taking place for the Salmon River. This has drawn in many experts and other supporters for our programs and has given insight to others as to how to accomplish their restoration work better.

- **Other Restoration Council related Programs and Projects**

Other specific projects related to the CRP included in SRRC's Work Plan this year were:

- 1) Forestry, Fire and Fuels Management Program
 - Fire Safe Council Coordination Fuels Reduction Projects - BLM and Siskiyou County Resource Advisory Committee
 - 7th Annual Fire Awareness Week
 - Fire Management and Fuels Treatment Planning and Assessment
 - Increasing Community Fire Awareness and Education to promote prevention and fire safety
- 2) Noxious Weed Management and Native Plant Awareness and Recovery Program
- 3) River Clean Up,
- 4) Klamath Resource Information System,
- 5) Watershed Education Program with 2 local schools,

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- 6) Spring Chinook Volunteer Recovery Work Group and associated assessments and activities,
 - 7) Formation of the Salmon River Water Quality and Restoration Monitoring Committee working in close conjunction with the California Total Daily Maximum Load process.
 - 8) Juvenile Out migration Screw Trap operation
 - 9) Fall Chinook Carcass and REDD Surveys
 - 10) Winter Steelhead Spawning Surveys
 - 11) Fisheries Barrier Monitoring
 - 12) Spring Chinook and Summer Steelhead Live Census (Dive)
-
- 13) Mining Awareness and Cooperation Activities

The SRRC is an active participant in various coordinated actions taking place in the Klamath Basin, which have an effect upon the Salmon River fisheries resources. These include: Klamath Basin Fisheries Health Assessment Team, Fire Safe Council of Siskiyou County, Siskiyou County Noxious Weed Management Area, Klamath Fisheries Task Force Technical Work Group, Klamath Salmon Learning and Understanding Group, Klamath Basin Flow Study, North Coast Regional Water Quality Control Board TMDL Study, Documenting Restoration Accomplishments for the Klamath Task Force, Spring Chinook Voluntary Recovery Work Group, TANGO (Tribes, Agencies and Non Government Organizations), FERC Klamath Dam Relicensing, and others.

A more detailed accounting of the SRRC activities during this period are included in Appendix 4.

- **Recording and Reporting**

During this period SRRC has continued to upgrade its system for tracking event and volunteer information in response to the increased complexity of reporting to a growing list of funders. We are using an access database to replace spreadsheets tracking. We are also incorporating the list of tasks from each of our agreements into our personnel budgeting and scheduling to insure all funded activities are performed and all activities are tracked. This has helped us to provide updates and reports to our funders, our focused work groups, and others.

- **Volunteer/In-Kind Contribution**

There were 541 non-staff community/resource user volunteer event attendances contributed to help restore the Salmon River subbasin (159 eight hour days). At \$12 an hour plus the value of implied benefits and \$.345/mile, the value of non-staff community in-kind service contribution was \$22,061.52 (of which \$4,109.56 was attributed to the CRP FY 04 and the matching California Dept. of Fish And Game organizational grants for the grant period). The dollar value of the staff in-kind contribution (including implied benefits) was \$87,613.97 of which

**SALMON RIVER COMMUNITY RESTORATION PROGRAM (CRP)
FINAL REPORT FY 04**

\$57,136.11 was attributed to CRP FY04 and the matching California Dept. of Fish And Game organizational grants for the grant period. There was also donated non-federal technical assistance valued at \$2,490.00. Additionally, there was GIS/GPS equipment use and related professional and technical in kind services valued at \$5,500. With California Department of Fish & Game matching agreements expenditures for the period of \$69,137.27, the total in-kind match for the project period is \$132,872.94. The total value of restoration expenditures coordinated by the SRRC in FY 2004 (including in kind service and mileage) was \$407,032.83 (See CRP 04 Final Data.xls).

Expenditures

Level of Staff	# Hours	Rate	Total	
Program Coordinator	36	\$ 20.00	\$720.00	
Technical Coordinator	18.5	\$ 20.00	\$370.00	
GIS & Report Prep	4	\$ 40.00	\$ 160.00	
Program Assistant	134	\$ 16.00	\$ 2,144.00	
Secretary	196.5	\$ 14.00	\$ 2,751.00	
Program Assistant	60.5	\$ 14.00	\$ 847.00	
Program Assistant	331.25	\$ 12.00	\$ 3,975.00	
Program Assistant	96.75	\$ 10.00	\$ 967.50	
Bookkeeper	18	\$ 9.00	\$ 162.00	
SUBTOTAL:			\$12,096.50	
Staff Benefits at 30%:			\$2,318.68	
Volunteer Per Diem			\$3,000.00	
TOTAL PERSONNEL COSTS REQUESTED:				\$17,415.18
Educational materials & WS Center Supplies			\$848.89	
Postage			\$32.00	
TOTAL MATERIALS & SUPPLIES REQUESTED:				\$880.89
Technical Assistance			\$1,085.00	
Workshop Fees & Costs			\$ 220.75	
Equipment Rental			\$ 159.48	
Property Insurance (Equipment)			\$ 61.35	
Utilities			\$ 582.19	
Transportation Costs (Mileage)			\$ 612.59	
Telephone			\$ 222.23	
Repairs			\$ 9.75	
Watershed Center Building Rental			\$ 650.01	

**SALMON RIVER COMMUNITY RESTORATION PROGRAM (CRP)
FINAL REPORT FY 04**

TOTAL OPERATING EXPENSES:	\$ 3,603.35
	\$ 21,899.42
Administrative Overhead at 15%:	\$ 3,284.56
	\$ 25,183.98

E) SUMMARY AND CONCLUSION

This has been an eventful and rewarding year for the SRRC. The SRRC will continue to take the lead role in heightening community awareness, enlisting local support, and promoting cooperative land and resource management among all stakeholders. This is necessary to effectively rehabilitate the Salmon River watershed and specifically the fisheries resources. In its task to enlist potential partners in watershed management, the SRRC realizes that this may be done more efficiently by coordinating restoration and protection activities with management and regulatory agencies, local resource protection entities, private landowners, and education facilities that already exist within and outside the subbasin.

In conclusion, the health of these aquatic and terrestrial ecosystems is the single most important factor in determining the ecological and economic well being of our rural riverine community. Cooperative community efforts such as the Salmon River Restoration Council are the best vehicle to achieve watershed/fisheries recovery with a minimum of dislocation to existing economic and social activities. As is evidenced by the SRRC's annual accomplishments, there exists a consistent expansion of community commitment to the protection and restoration of the Salmon River subbasin and in particular its anadromous fisheries resource. Without the support of the watershed residents and various associated stakeholders the recovery and maintenance of the watershed and fisheries may not be possible. Due to the Salmon River Subbasin's remoteness and management access problems, the government agencies must have the active cooperation and support of the communities to expediently recover the fisheries resources associated with the Salmon River. The SRRC believes that strong community partnerships are essential to the recovery of the natural environmental and sustainable social conditions.

To: Phil Detrich
 Attn: Darla Eastman
 U.S. Fish and Wildlife Service
 1829 South Oregon St.
 Yreka, CA 96097

Billing Date: 10/22/2004

Agreement Number: # **113334G008**

Project # 2004-PC-05

PROJECT TITLE: Salmon River
Community Restoration Program

FOR WORK COMPLETED: 10/01/03
 to 9/30/2004

PERSONNEL COSTS

Level of Staff	# Hours	Rate	Total	
Program Coordinator	36	\$ 20.00	\$720.00	
Technical Coordinator	18.5	\$ 20.00	\$370.00	
GIS & Report Prep	4	\$ 40.00	\$160.00	
Program Assistant	134	\$ 16.00	\$2,144.00	
Secretary	196.5	\$ 14.00	\$2,751.00	
Program Assistant	60.5	\$ 14.00	\$847.00	
Program Assistant	331.25	\$ 12.00	\$3,975.00	
Program Assistant	96.75	\$ 10.00	\$967.50	
Bookkeeper	18	\$ 9.00	\$162.00	
SUBTOTAL:			\$12,096.50	
Staff Benefits at 30%:			\$2,318.68	
Volunteer Per Diem			\$3,000.00	
TOTAL PERSONNEL COSTS REQUESTED:				\$17,415.18

MATERIALS AND SUPPLIES

Educational materials & WS Center Supplies	\$848.89	
Postage	\$32.00	
TOTAL MATERIALS & SUPPLIES REQUESTED:		\$880.89

OPERATING EXPENSES

Technical Assistance	\$1,085.00	
Workshop Fees & Costs	\$ 220.75	
Equipment Rental	\$ 159.48	
Property Insurance (Equipment)	\$ 61.35	
Utilities	\$ 582.19	
Transportation Costs (Mileage)	\$ 612.59	
Telephone	\$ 222.23	
Repairs	\$ 9.75	
Watershed Center Building Rental	\$ 650.01	
TOTAL OPERATING EXPENSES:		\$ 3,603.35

Total Program Costs		\$ 21,899.42
Administrative Overhead at 15%:		\$ 3,284.56
(Includes Fall Count Excess Funds)		\$ 25,183.98
Less Advance		\$ 14,771.76
Total Now Due		\$ 10,412.22

_____ Kathleen E. McBroom, Sec/Treas

Salmon River Restoration Council Three Year Work Plan

PROJECT NAME		2004			2005			2006			PROJECT SUMMARY/OBJECTIVES
	Funding Status	Project Status	Cost	Funder	Project Status	Cost	Funder	Project Status	Cost	Funder	
1. EDUCATION											
Volunteer Participation 500 Person Days Annually	★	B	50	V	B	50	V	B	50	V	Enlist participation of community members and other stakeholders in SRRC community restoration program.
Ecosystem Awareness Workshops/Restoration Training Workdays	\$	B	12	6	B	12	6	B	12	6	Community, tribal, agency, technical advisors and others will participate. Improve restoration techniques and train community members for new
Klamath Resource Information System (KRIS)	\$, ★	B	10	6	B	2.5	6	B	10	6	Increase access to, and coordination tools for watershed information/restoration needs and activities. Update Salmon River KRIS.
Newsletters/Brochures	\$	B	8	6	B	8	6	B	8	6	Facilitate communication with agencies, community, schools, legislators, general public.
(video, photo display board, handouts)	\$	B	5	6	B	5	6	B	5	6	Provide key restoration info to public, legislators, schools, tribes, etc.
Watershed Center SRRC office: meetings, GIS/ GPS, computer, other equip., public information.	\$	B	12	6	B	12	6	B	12	6	Maintain centralized location for staff, library, equipment, provide public access to restoration information and SRRC activities. Provide meeting
Watershed-ED Forks of Salmon and Junction Elementary Schools	\$	B	20	6	B	20	6	B	20	6	Provides ongoing watershed education coordination and support for students and community in local schools.
SRRC Webpage	\$	B	1	6	B	1	6	B	1	6	Update/maintain webpage to promote regional/national awareness and support.
Conference/Workshop Attendance	\$	B	2.5	6	B	2.5	6	B	2.5	6	skills/knowledge associated with ecosystem management.
2. PLANNING											
Coordinated Fire Management Strategy Wildland Urban Interface	\$, ★	B	3	6	B	3	6	B	3	6	Continue to develop and update strategy to reduce catastrophic fire potential that addresses private/federal/tribal land needs.
Develop Detailed Fire Safe Plans for Towns and Neighborhoods	\$, ★	B	9	6	B	9	6	B	9	6	Fire Safe Plans identify High Value Areas, Fuel Areas, water systems, etc. and make suggestions to reduce the impact of future fires.

Funding Status:
\$ - Funded
★ - Proposed
☞ - Not Funded

Project Status:
A - Initiated
B - Ongoing
C - Complete

Funding Sources:
1 - USF
2 - USFS
3 - CDFG
4 - SWQCB
5 - RAC
6 - Multiple
V - Vol

Salmon River Restoration Council Three Year Work Plan

PROJECT NAME	Funding Status	2004			2005			2006			PROJECT SUMMARY/OBJECTIVES
		Project Status	Cost	Funder	Project Status	Cost	Funder	Project Status	Cost	Funder	
Fisheries Assessment, Protection and Restoration Strategy- Salmon River Community Restoration Plan - Annual update Incorporate Board, staff, committee, vision meetings.	\$ ★	B	5	6 B		5	6 C		5	6	Identify Limiting Factors and Develop strategy to protect and restore native fisheries - focus on spring chinook -fall chinook, steelhead. resident trout, sturgeon, and lamprey. Improve coordination between all fisheries stakeholders- fishing community and managers. Incorporate various fish
	\$	B	1.5	1 B		1.5	1 B		1.5	1	SRRC Community Restoration plan will provide a general overview and guide activities and monitor progress annually.
Guides/Anglers Fishing Group	\$	B	1.5	6 C		1.5	6 C		1.5	6	Foster and support cooperative fishing group in the Salmon/Klamath river area, which helps to improve regulations, address fishing problems, and assist in fish monitoring
Roads Management Plans - Waste(Dirt), landings, fish passage	☞	A	2	6 B		2	6 C			6	Develop road management plans, long and short term storage of waste, fish barrier improvement and other needs.
Sub-Watershed/Neighborhood Ecosystem Management Plans	☞	B	5	6 B		5	6 B		5	6	Foster the development of Land use and resource Restoration and Protection Plans for private land(s) in each sub-watershed or neighborhood that highlights sustainable resources and restoration
Toxics Management Plan for solid waste, hazardous materials, and abandoned vehicles	★	A	8	B		1	6 B		1	6	Develop a strategy to identify and address potential toxic sources, provide alternatives to toxics, monitor for toxics, promote recycling and host educational events.
Mine Tailings Recovery Plan	☞	A	1 V	B		5	6 C		10	6	Develop strategy to assess, prioritize and reclaim mine tailings in riparian areas.
Cooperative Noxious Weed Management Plan	\$ ★	B	10	6 B		2	6 B		2	6	Develop a short and long range strategy to prioritize and control noxious weed on public and private lands - utilize non-chemical approach
Salmon River Subbasin Cooperative Restoration Strategy	☞	B	2.5	6 B		2.5	6 B		2.5	6	Work with various stakeholders to update and implement the comprehensive assessment and strategy that identifies and prioritizes watershed restoration and fisheries recovery
3. AQUATIC RESTORATION											

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Salmon River Restoration Council

Three Year Work Plan

PROJECT NAME			2004			2005			2006			PROJECT SUMMARY/OBJECTIVES
	Funding Status	Project Status	Cost	Funder	Project Status	Cost	Funder	Project Status	Cost	Funder		
Salmon and Steelhead Juvenile Rescue	☞	A	1 V		B	0 V		B	0 V		Assess and prevent mortality by rescuing juveniles stranded in side pools after high waters.	
Increased Fish Passage	☞	A	1	3 B		12		3 B	12	3	Clear blocked stream mouths to increase spawner access.	
Hatchery Practices	☞	A	1 V		B	2	6 C		2	6	Identify/implement improved hatchery practices, to develop conservation hatching techniques.	
River Clean-Up	☞	B	1 V		B	2 V		B	5 V		Hold several activities which clean up garbage and other unwanted debris from the River	
4. TERRESTRIAL RESTORATION												
Revegetation of Disturbed Sites in Tributaries (Riparian, Landslides, Burned and others)	☞	B	5	6 B		5		6 B	5	6	Assist in disturbance recovery.	
Private Land Fire Safe Fuel Treatment	\$, ★	B	30	6 B		30		6 B	30	6	Protect Private land and critical accesses for residents and fire fighters	
Neighborhood Road Stewards/Storm Patrol	☞	B	5	6 B		5 V,6		B	5 V,6		Road users/residents will prevent road failure and identify problems on key access roads during use and in storms	
Improve roads on private lands	☞	A	20	3 B		200		3 B	200	3	Rehab prioritized roads on private lands	
Noxious Weed Management And Native Plant Community Enhancement	★, \$	B	50	6 B		50		6 B	50	6	Control Noxious Weeds in the subbasin, by applying the 13 steps in the Noxious Weed Management plan. Restore Noxious Weed sites - manage vegetation, improve habitat, restrict access.	
Native Plant/Seed Bank Cooperative (Community members, schools, local nurseries)	☞	B	1 V		B	1		6 B	1	6	Collect, grow and/or plant trees, shrubs, grasses annually to be used at various restoration sites on private and public lands.	
Large Scale Stewardship Project - Fire & Road Related	☞	A	800	5 B		800		5 B	800	5	Perform fuel reduction activities and road restoration and other activities on a landscape scale	
5. ECOSYSTEM ASSESSMENT/MONITORING												
Mortality Assessment	☞	B	2 V		B	2 V		B	2 V		Monitor for fish kills	
Juvenile Anadromous Fish Assessment	\$	A	10	6 B		15		6 B	20	6	Perform Juvenile Surveys and run Screw Trap	
Spring Chinook Volunteer Salmon and Summer Steelhead Annual Census	\$, ★	B	5	6 B		5		6 B	5	6	Assess species population and holding habitat use. Assess adults and juveniles. Assess presence and absence as well as habitat utilization.	

Funding Sources:

Funding Status:
 \$ - Funded
 ★ - Proposed
 ☞ - Not Funded

Project Status:
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Funding Sources:
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Salmon River Restoration Council Three Year Work Plan

PROJECT NAME	Funding Status	2004				2005				2006				PROJECT SUMMARY/OBJECTIVES
		Project Status	Cost	Funder	Project Status	Cost	Funder	Project Status	Cost	Funder	Project Status	Cost	Funder	
Noxious Weed Assessment	\$, ★	B	15	6 B	6 B	15	6 B	6 B	15	6 B	6 B	15	6 B	Survey for various prioritized weeds at the subbasin level
Weak Stocks Assessment	\$, ★	B	28	6 B	6 B	30	6 B	6 B	30	6 B	6 B	30	6 B	Assess spring chinook, summer and winter steelhead, coho, sturgeon and lamprey in the Salmon River subbasin
Fall Chinook Carcass and REDD Survey	★	B	5 V, 1	6 B	6 B	5 V, 1	6 B	6 B	5 V, 1	6 B	6 B	5 V, 1	6 B	Assess species population and spawning habitat use. Assess adults and juveniles. Assess presence and absence as well as habitat utilization.
Water Monitoring	\$, ★	B	6	4 B	6 B	8	6 B	6 B	8	6 B	6 B	8	6 B	Continue to monitor water temp, flows, and other TMDL factors
Expanded History Project	☞	B	25	6 B	6 B	25	6 B	6 B	25	6 B	6 B	25	6 B	Examine historical conditions to help determine watershed capacity.
Salmon River Restoration Monitoring Data Base	☞	A	10	6 B	6 B	10	6 B	6 B	10	6 B	6 B	10	6 B	Develop and update Tracking System to display monitoring information for restoration projects in the Salmon River. Address implementation and effectiveness monitoring needs.
Develop Fisheries Data Library	☞	A	5 V	6 B	6 B	13	6 B	6 B	13	6 B	6 B	13	6 B	Collect fish tissue samples needed by managers.
Vegetation/Fuels Assessment	☞	A	10	6 B	6 B	20	6 B	6 B	20	6 B	6 B	20	6 B	Develop a vegetation/fuels assessment on private, interface, and public lands.
Subbasin Roads Assessment for each 5th Field Watershed	☞	C												Inventory and prioritize road related problems in sub-basin. (GIS/GPS) Completed on federal land. Need to complete private land.
Fill Data Gaps identified in the Subbasin Restoration Strategy Inventory Upgrade	☞	A	10	6 A	6 A	10	6 B	6 B	10	6 B	6 B	10	6 B	Perform Literature Search and assemble data and comments to determine prioritized data needs
COOPERATION/COORDINATION														
Salmon/Mid Klamath Fish Technical Working Group	☞	B	5	6 B	6 B	5	6 B	6 B	5	6 B	6 B	5	6 B	Develop multiple fish specialists work group to focus on identifying assessment and management needs for the protection and restoration of the native anadromous fisheries.
Salmon River Spring Chinook Recovery Group	\$	A	5	6 B	6 B	5	6 A	6 A	5	6 A	6 A	5	6 A	Coordinate multiple stakeholder work group to focus on identifying what is needed to recover the Spring Chinook run.

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Project Status:
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Funding Sources:
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Salmon River Restoration Council Three Year Work Plan

PROJECT NAME	Funding Status	2004			2005			2006			PROJECT SUMMARY/OBJECTIVES
		Project Status	Cost	Funder	Project Status	Cost	Funder	Project Status	Cost	Funder	
Salmon River Fire Safe Council	\$ ★	B	10	6 B		10	6 B		10	6	Coordinate multiple stakeholder work group to focus on identifying fire and fuels management needs on private/public lands
Salmon River/Mid Klamath Noxious Weed Management Group and Native Plant Recovery	\$ ★	B	15	6 B		10	6 B		10	6	Coordinate multiple stakeholder work group to focus on identifying native plant and noxious weeds management needs. Develop MOU's
Klamath/Salmon Guides and Angler's Association	\$ ☞	B	5	6 B		5	6 B		5	6	Coordinate Fishing Community activities to hold educational activities, identify problems related to fish, make recommendations to management, and assist in monitoring.

Funding Status:
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Project Status:
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Funding Sources:
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**Salmon River Restoration Council
Appendix 4 CRP 04 Final Report
Community Restoration Program Activities**

Some of the key activities that we provided or participated in during this period are included in the following list that is divided into months to provide a more detailed accounting of the SRRC activities.

**LIST OF KEY COMMUNITY RESTORATION PROGRAM ACTIVITIES
INCLUDE:**

October 2003

Held SRRC Staff Meeting; Stakeholder Planning Meeting; Fall Chinook Carcass and REDD Survey Training and Whitewater Training; Fall Chinook REDD and Carcass Survey Workdays; Spring Chinook Spawning Surveys (Separate Grant); Developed and/or circulated brochures, posters and/or other information; Our web page was updated; Coordinated Salmon River Fire Safe Council Planning and General Meeting and Siskiyou County Fire Safe Council meeting (Separate Grant); Held Noxious Weed Control Workdays, Coordinated Salmon River Noxious Weed Management Group Meeting to review progress and attended Siskiyou County Weed Management Group meeting (Separate Grant); Brought in community volunteers for the school's Watershed Education Program – hobo temps and Fall Chinook Survey (Separate Grant); Monitored water temperatures; Held a Geology Field Trip; Provided a presentation and discussion to the Redwood Chapter of CA Native Plant Society; Attended Klamath Dam re-licensing planning meeting; Attended Klamath Basin Fish Monitoring Work Group; Held a community Vision Meeting; Attended meeting of Klamath/Salmon Collaborative Working Group (SRRC, the Karuk Tribe, Dept. of Natural Resources and the Mid Klamath Watershed Council); Circulated Monthly Calendar; Maintained Salmon River Watershed Restoration Center and SRRC Office (Watershed Center); Performed community outreach at the Harvest Bazaar; Made a Noxious Weeds presentation in Illinois Valley, OR; Attended Fish Sniffers meeting; Attended review of Hardy II study; Attended Task Force meeting and field trip; Hosted a tour of the Salmon River for BOR.

November 2003

Held SRRC Staff meeting, Circulated Monthly Community Events Calendar, Developed and/or circulated brochures, posters and/or other information; Fall Chinook Carcass and REDD Survey Workdays (Separate Grant); Fire Wise Conference (Separate Grant); Klamath Fish Monitoring Group meeting; Coordinated Salmon River Spring Chinook Voluntary Recovery work group meeting; Attended Klamath Flow Study Meeting; Attended Klamath Dam Relicensing Hearing and Pacificorp Dam Meeting; Documented Accomplishments for Task Force; Enlisted community members in the Salmon River School's Watershed Ed Program; Held Road Winterizing Workdays; Coordinated Fire Safe Council meeting and activities (Separate Grant), Coordinated Salmon River Noxious Weed Management Group Meeting (Separate Grant), Coordinated SRRC Fuels Reduction Activities including a fuels reduction fieldtrip with the USF&W at Butler Flat (Separate Grant); updated Web site, and Maintained Watershed Center; Met with California Dept. of Fish and Game to review proposed water diversion at White's Gulch; Archeological site inspection fieldtrip for Sawyers fuels reduction (Separate Grant); Performed Klamath Resource Information System programming.

**Salmon River Restoration Council
Appendix 4 CRP 04 Final Report
Community Restoration Program Activities**

December 2003

Maintained Watershed Center; Held SRRC Staff Meeting; Circulated Community Events Calendar; Developed and/or circulate brochures, posters and/or other information; Fall Chinook Spawning Survey Workday (Separate Grant); Klamath/Salmon Collaborative Working Group Meeting; Adult Coho Spawning Survey and training (Separate Grant); Made presentation to Klamath Task Force Technical Work Group; Coordinated Fire Safe Council Planning and General Meetings (Separate Grant); Updated Web site; Attended Hardy Phase II Flow Study meeting; Attended Klamath Flow Study Group meeting; 2004 Work Plan development.

January 2004

Maintained Watershed Center; Updated Website; Produced and Circulated Community Calendar of Activities; Developed and/or circulate brochures, posters and/or other information; Klamath Fish Monitoring Group meeting; Otolith Collection Planning Workshop; Made presentation at Headwaters Conference; Klamath/Salmon Collaborative Working Group Meeting (KSCWG); Attended and advised MKWC scotch broom workday; Attended TANGO meeting; Attended Scott River Watershed Council restoration meeting; SRRC Staff Meeting; Coordinated Fire Safe Council Planning and General Meetings (Separate Grant); North Coast Regional Water Quality Control Board (NCRWQCB) TMDL Study Meeting; Updated Community Restoration Plan and developed an Annual Work Plan; Submitted three project proposals to the Siskiyou Resource Advisory Committee (RAC); Held a Dredgers Awareness Planning Meeting; Fall Chinook REDD and Carcass Survey Workdays; 2004 Work Plan development; Provided GIS Assistance to the Orleans/Somes Bar Fire Safe Council (Separate Grant).

February 2004

During this month SRRC participated in the Salmon River Fire Safe Council Meeting and the Siskiyou County Fire Safe Council Meeting; participated in Klamath Basin Fish Monitoring Work Group Meeting; Held Annual SRRC Board Meeting and adopted the 2004 Community Restoration Plan and Annual Work Plan; Held SRRC Staff Meeting; did Website Update; Produced and Circulated Community Calendar of Activities; Provided support to the Watershed Education Program in the local schools; Coordinated Klamath/Salmon Anglers and Guides Association Meeting; participated in Winter Steelhead Survey Planning Meeting; made presentations on SRRC at Klamath Fisheries Task Force Meeting and at the Klamath Conference; Participated in Roads Planning Fieldtrip, Monte Creek field trip; Attended the North Coast Educational Summit; attended Mid Klamath Watershed Council Open House.

March 2004

Maintained Watershed Center; Coordinated Salmon River Fire Safe Council Meeting and participated in the Siskiyou County Fire Safe Council Meeting; Updated Website; Developed and/or circulated brochures, posters and/or other information; Co-coordinated the Winter Steelhead Survey Training and weekly winter steelhead surveys with the Weak Stock Program; Worked with the US Fish and Wildlife and the Karuk Tribe to

Salmon River Restoration Council
Appendix 4 CRP 04 Final Report
Community Restoration Program Activities

install and run the Salmon River out-migration screw trap; Held film making workshop for Watershed Ed at Junction school (separate agreement); held a Roads Restoration workday; held a GPS & GIS Training workshop; held the Cecilville Fire Planning Open House; Coordinated with North Coast Regional Water Quality Control Board (NCRWQCB) regarding Salmon River TMDL process; Produced and Circulated Community Calendar of Activities; Coordinated weekly Steelhead REDD Surveys; Conducted several noxious weed control activities (Coordination, Field Work, Planning, Education, Monitoring, Reporting) (Separate Grant); Held SRRC Staff meeting; Provided support to the Watershed Education Program in the local schools (Separate Grant); Attended KSCWG meeting; made a presentation to the TWG; attended TANGO meeting; attended MKWC meeting; presented Noxious Weed program at RAC meeting in Reno; Participated in KBFHAT training and meeting.

April 2004

Maintained Watershed Center; Web Site Update; Developed and/or circulated brochures, posters and/or other information; Co-coordinated weekly winter steelhead surveys with the Weak Stock Program; Conducted several noxious weed control activities (Coordination, Field Work, Planning, Education, Monitoring, Reporting) (Separate Grant); Assisted the Mid Klamath Watershed Council in planning and project development for monitoring; Produced and Circulated Community Calendar of Activities; Held SRRC Staff meeting; Provided support to the Watershed Education Program in the local schools; Coordinated Salmon River Fire Safe Council Meeting and attended county wide meeting and regional conference (Separate Grant); Hosted Cooperative Recreational Dredging Workshop; Co-sponsored and attended Biophysical monitoring workshop; Attended KBFHAT meeting; Attended New 49er's Dredger Awareness meetings; Attended CDF&G proposal meeting in Yreka; Co-staffed out migration screw trap (Separate Grant); Fire training (Separate Grant).

May 2004

Maintained Watershed Center; Website Update; Developed and/or circulated brochures, posters and/or other information; Co-coordinated surveys for the head of the run of Spring Chinook and for Green Sturgeon and Lamprey in conjunction with the Weak Stock Program; Implemented Noxious Weed Management Program 13 Steps; Produced and Circulated Community Calendar of Activities; Held SRRC Staff meeting; Provided support to the Watershed Education Program in the local schools; Coordinated Salmon River Fire Safe Council Meeting and attended County meeting (Separate Grant); Assisted in holding the Fish Fair for students in Hoopa; Held Watershed Fair at Forks Elementary for Salmon River Students (Separate Grant); Participated in the KBFHAT Fish Kill Drill; SRRC Staff held a training meeting with a consultant to develop ways to improve SRRC meetings and our ability to hold meetings, workshops, and make presentations; Attended Spring Chinook Work Group Meeting; Participated in a Weakstocks Planning Meeting (Separate Grant); Attended Forks of Salmon School Board Meeting and discussed Spring Chinook Recovery Plan; Made a presentation to Forks School on Biomes; Attended a Fire Safety Refresher Course (Separate Grant); Co-staffed out migration screw trap; Participated in KBFHAT meeting.

**Salmon River Restoration Council
Appendix 4 CRP 04 Final Report
Community Restoration Program Activities**

June 2004

Maintained Watershed Center; Developed and/or circulated brochures, posters and/or other information; Held SRRC Staff meeting; Produced and Circulated Community Calendar of Activities; Provided Salmon River proposal presentations to the Klamath Fisheries Restoration Task Force Technical Work Group; Attended Lower Klamath Basin Science Conference (4 days); Attended Klamath Dam FERC Relicensing Hearing; Coordinated Salmon River Fire Safe Council Meeting and attended County meeting (Separate Grant); Conducted several noxious weed control activities (Coordination, Field Work, Planning, Education, Monitoring, Reporting) (Separate Grant); Performed Hobo Temp monitoring activities; Held a Float Trip with Mid Klamath Watershed Council to inventory and manage noxious weeds; Presented at a Klamath Basin Task Force meeting in Klamath Falls; Co-staffed out migration screw trap; Participated in KBFHAT meeting.

July 2004

Maintained Watershed Center; Held SRRC Staff meeting; Produced and Circulated Community Calendar of Activities; Coordinated activities associated with the Spring Chinook Salmon and Summer Steelhead Population Surveys; Met with the California Department of Fish and Game for pre-work on new agreements; Performed Hobo Temp monitoring (Separate Grant); Increased stakeholder and specialist awareness, coordinated and monitored new suction dredge recreation gold mining in the Salmon River Subbasin; Conducted several noxious weed control activities (Coordination, Field Work, Planning, Education, Monitoring, Reporting) (Separate Grant); Conducted flow monitoring in the different forks of the river and in tributaries (Separate Grant); Conducted Weak Stocks fisheries surveys for juvenile Coho salmon and other species (Separate Grant); Participated in FERC relicensing process and review and develop comments on application for the hydro-generation in the Mainstem Klamath Subbasin. Attended and participated in the Beyond Crisis to Consensus conference; Participated in KBFHAT meeting; Conducted a Noxious weed field trip with Ca. Ag. Dept.; Attended ESA hearing; Attended California Department of Fish & Game Proposal Interview; Participated in a Cold Water Refugia Study on the Salmon River; Coordinated the Salmon River Fire Safe Council Meeting (Separate Grant); Met with Salmon River District Ranger to discuss restoration and develop activities, Co-sponsored and participate in Siskiyou Count Weed Tour; Co-staffed out migration screw trap (Separate Grant).

August 2004

Maintained Watershed Center; Held SRRC Staff meeting; Produced and Circulated Community Calendar of Activities; Developed and/or circulated brochures, posters and/or other information; Developed and circulated SRRC Newsletter; Co-coordinated activities associated with the Spring Chinook Salmon and Summer Steelhead Population Surveys, including conducting survey training, coordinating volunteers; providing food, and providing presentation and poster board display with handouts, sponsored educational activity in the evening, SRRC et al developed a training video; Coordinated Salmon River Fire Safe Council Meeting (Separate Grant); Hobo Temp monitoring

**Salmon River Restoration Council
Appendix 4 CRP 04 Final Report
Community Restoration Program Activities**

(Separate Grant); Conducted numerous days of noxious weed control activities (Coordination, Field Work, Planning, Education, Monitoring, Reporting) (Separate Grant); Conducted Weak Stocks fisheries surveys for Spring Chinook and Summer Steelhead Adults in Wooley Creek and for juvenile Coho salmon and other species (Separate Grant); Conducted flow monitoring in the different forks of the river and in tributaries (Separate Grant); Made a presentation to KBFHAT and attended TANGO meeting; Staffed the Siskiyou County Noxious Weed Booth at the County Fair; Co-staffed out migration screw trap (Separate Grant); Conducted a dredgers monitoring meeting.

September 2004

Maintained Watershed Center; Held SRRC Staff meeting; Produced and Circulated Community Calendar of Activities; Produced and Circulated Fall Newsletter; Developed and/or circulated brochures, posters and/or other information; Program Coordinators Planning meeting/develop 2005 Work Plan; Held Noxious Weed Annual Review and 2005 Planning meetings; Attended USBR Conservation Implementation Meetings; Co-staffed out migration screw trap; Participated in Fall Chinook Survey Planning Meeting; Co-sponsored Road Restoration Workshop; Held Salmon River Fire Safe Council monthly meeting (Separate Grant); Held Garden Gulch Fuels Reduction Review Field Trip; Held River Clean up Workday; Co-coordinated otolith collection training; Met with USFWS for upper basin; Attended CIP meeting (BOR); Documented Accomplishments for Task Force.

Spring Chinook Voluntary Limiting Factors Analysis
Adult Holding

Life Stage Salmon River Adult Holding	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=likely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
	Predation	Bears (DM)					
	Harvest	Harassment Poaching(DM)		complete/evaluate available temperatures for maturing and spawning adults; check literature and USGS for information regarding egg viability	3 Poaching pressure(DM)		
	Disease		Temperature data		1-2 mortality	The model SIAM, indicates that warm temperatures for maturing fish may be a major cause of egg mortality.	
	Water Quality		1990-2002 USFS/SRRC. V-Star	Model role of shade on stream temp.	1 legacy	Reduction of riparian cover due to legacy	Preferred holding temps exceeded in much of watershed.
		Temperature	Review USFS data regarding availability of thermal refugia; Hillmeier research on S.F.R. Trinity indicates importance of thermal refugia during low flow years 2002 RWQCB. SR Sediment Analysis	Review available info and assess extent of refugia. If data is not available regarding thermal refugia availability, then collect.	2	mining, harvest, fire.	Per anecdotal info extent of refugia is limited.
		Thermal Refugia			2		
		Dissolved Oxygen			3		
		Other Constituents	2002 RWQCB		3	Fire Retardant	
		Food Availability			2		
		Holding Habitat			2		
		Lack of Cover - coarse woody debris, etc			1	Legacy mining activity, road-related landslides.	Are there less pools available? Problem near Mathews Creek.
		Pools decreasing in size and number		Quantity pool filling.			

Spring Chinook Voluntary Limiting Factors Analysis

Ocean

Life Stage	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=unlikely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/comments
Ocean	Predation		NMFS studies regarding marine mammal predation (Joe Scordino has copy)	review literature from the past few years	3		Has large influence upon salmon abundance, but not something that managers can affect (may be able to use to predict abundance for management purposes) (DH).
	Ocean Conditions	Food (PB)	USFWS info. Literature regarding relationship between ocean conditions and salmon abundance		2	El Nino, PDO	Optimal conditions for food supply exist where there are cool ocean temps and upwelling off the coast. These conditions exist in La Nina years and when PDO has shifted to cool. Upwelling brings nutrients to surface, and reduce competition from southern fish.
							PFMC, on recommendations from KFMAC, manages ocean fisheries for a max harvest rate on age-4 Klamath fall chinook that would be from 20-25% except that there's a cap of 16% to protect coastal fall chinook. So if management equalled reality (usually within 20% of target, i.e., if target is 16%, observed is usually between about 12% and 20%), we'd never catch more than 16% of the age-4 Klamath fall chinook in the ocean as of May 1. We've always assumed that our harvest rate on Klamath spring chinook is a bit lower than that on fall chinook, based on what we think we know about the distribution of the fish and fishing effort in the ocean. Basically KFMAC tech team is asked to discover: just how correct is this assumption? (DB)
	Harvest			KRTAT (KFMAC) needs to continue ongoing work regarding harvest rates, harvest objectives, time/area harvest impacts, etc...			Historically this could have been a problem, but unlikely to have been a substantial problem since the early 1990's. However, certain fisheries could be a red flag (e.g. spring fisheries near the Klamath)
	Disease			Foreign and domestic fisheries (DM)			2 (DH)
	Habitat	Pollution		Where do Salmon River Spring Chinook go in the ocean?			

Spring Chinook Voluntary Limiting Factors Analysis
Smolt in Estuary

Life Stage	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs
Smolt from the Estuary to the Ocean (Yearling Chinook? - Hatchery - Oct; Trilly - Nov; IGH - Mixed January thru May). (Young of Year Chinook? - March thru October when survey stopped) Young of year could be present year round. Peak Young of Year - Late June to Early July. (Viel years are later). Trilly Yearling - Oct - Late Nov/Dec. IGH - Yearlings still present in March	Water Quality			
		Temperature	There is much temp data available. Olson (1996) regarding time of emigration. Mike Wallace - (In some years fish are pooled in areas of brackish water on the bottom. May be potential problem in summer months. Late June can typically be over 20 degrees C. Coos in July. Heads up again in August. Salt wedge didn't set up in 1994, when mouth access was hampered (filled in). Michael Banks has genetic research that distinguish spring chinook from fall chinook.	Identifying any Sp Chin smolt in the estuary is difficult. A Salmon R. smolt are more difficult. Need to check numbers of eggs/pupae in tributaries of MS above Salmon R. Need to distinguish Sp Chin from Fall Chin. Also distinguish Salmon R. Sp Chin from other sources (Trilly/Hatchery & estuary). Need to research the use of genetic, coded/smolt-coded with otoliths. Sp Chin smolts are turning back of the Salmon R. library string of movement of Sp Chin smolts throughout the Spring/Summer. Need to research the use of genetic, coded/smolt-coded with otoliths. Need to research the use of genetic, coded/smolt-coded with otoliths. Need to research the use of genetic, coded/smolt-coded with otoliths.
		Dissolved Oxygen	HydroLab data from various entities (Tribe, USFWS, USGS)	review existing data and continue collection
		Nutrient	NCRWOCB may have info from 1960's thru 1980's. No recent studies, except TMDL.	review existing information. Yurck/Monica and USF&WS (George G.)
		Sediment - deposition and suspended		Herbicides: Need to do literature search to see if there is info to determine estuary volumedepth. May need more research. Relevant for adults as well
		Other Constituents		review existing data and continue collection. Talk to CATS. Talk to Lori McKinnon. Talk with Jen Kall
	Thermal Refugia	Quantity, quality, distribution	HydroLab data from various entities (Tribe, USFWS, USGS) DFG has observed that there is an order of magnitude of high density at the mouth of Hunter Creek. Need to look to see what salt wedge provides an refugia. smolts usually don't want to be in salt wedge too much. Are fish in transitional salt wedge area?	May need to look at relationship to estuary and Ocean effect on survival of smolts infected in the Mendenhall/Kaimath with C. Shasta. Talk to Scott Frode.
	Habitat/Rearing		Food Study was done by DFG. Yurck has started additional studies. Mendenhall wrote a book identifying soundings in the estuary done in the early 1800's. Del Norte Historical Society may have info. Check with Yurck.	need to do literature search to see if there is info to determine estuary volumedepth. May need more research. Relevant for adults as well. Need to see if hatchery fish are competing with naturals for food source. Need to look at hatchery natural interactions.
	Disease		Need to look at estuary effect on C. Shasta	Talk to Scott F.

Spring Chinook Voluntary Limiting Factors Analysis
Smolt in Estuary

Subjective opinion regarding likelihood of being a limiting factor (1=likely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
	<p>Not likely a problem for the smolts that emigrate in October - likely would be a problem for the earlier emigrating smolts (especially July). Olson (1998) indicates a large % emigrate in October, however no population numbers penetrated from traps (just catch numbers) and October had much lower flows than other times of year (i.e. likely higher efficiencies). Scales indicate large % of survivors had Type I life history, however don't know if this was in Salmon or mainstem, or whether the Type I just did not survive because of parameters such as Klamath R. water quality. In summary, it seems likely that a large % emigrate in October, however the rest may face terrible Klamath R. conditions (DHY). Temperatures 1-2 from June to August are stress times.</p> <p>There didn't seem to be much of a DO problem. During juvenile fish kill there still wasn't a problem. In deep isolated and 3 small areas there was some readings of below 4.</p> <p>3 Fertilizers. Cows in the estuary in North side tribs - Salt Creek</p> <p>3 Irrigation run-off, etc.: could likely cause problems - beginning to be much work done to assess this (USFWS, Pacific Corps, possibly NCRWQCB). Look at problems related to development on the estuary. Simpson uses herbicides on the 2 upslope. Boats may leak fuel (MTBE). Caltrans spray's highway. Old Pantia olson site exists in Hoppaw Creek.</p> <p>Refugia may have shrunk over time if estuary is filling. Have Waiwail, Hoppaw, Hunter, Richardson Creeks been altered 2 and reduced/diminished thermal refugia? Need to isolate timing of Salmon River fish.</p> <p>Densely Dependant = 1. Habitat Rearing + 2 the rip rap</p> <p>Edge habitat effected by the rip rap below old 101 bridge and extends 2-3 miles. Sinuously may have changed because of 4 disease.</p> <p>Most are naturally occurring. Water Quality and water temp enhances disease. Crowding may create problems with 4 disease.</p>	<p>Estuary is very productive. No evidence of over nitrification, which is related to DO problems.</p> <p>Tribal elder reports indicate estuary is filling in - they remember 40 foot holes. DFG has depth data maps from the early 1990's - deepest pools were 25 feet. USF&WS has maps done of the lower mile done in the mid-late 1980's. No big differences in depth were noticed by DFG. 1920's Highway department showed that depths were not much deeper than 30'. Jet boat tour folks have photos.</p> <p>Lump in with temperature concerns. Once we isolate Salmon River springs.</p> <p>May not have been much wood historically. Need to look at the affects of hatchery smolts on the SR... Chinook hang out at gravel cobble beach front. May be skewed by gear.</p> <p>Temp concerns for disease (C. Shasta) could be lower than general stress. 16-18 is in the range. Scott Frode found less incidence or effect of C. Shasta in the estuary than in the Mainstem. C. Shasta may heavily affect smolts when they make the change into the ocean, due to stress on kidneys. Check with Scott Frode.</p>

Spring Chinook Voluntary Limiting Factors Analysis
Smolt in MS Klam

Life Stage	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/Information	Data/research Needs <i>More info about When Smolts head out (DH+)</i>	Subjective opinion regarding likelihood of being a limiting factor (1=unlikely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
Smolt in the Mainstem Klamath							
	Water Quality	Temperature	1980-2002 USFS/SRRC	1.d. temp conditions in locations known as rearing habitat.	1	Lack of shade, hydromodification in Klamath. Downriver Fishermen say non-native Duckgrass may be a potential problem (DM, Yurck)	Mainstem temps exceed preferred rearing temp range.
		Flows (DM)			2		
		Dissolved oxygen	USFWS/Karuk				
		Ammonia					
		pH					
		Nutrients				fertilizers	
		Ag Chemicals					
	Water Quantity						
		Stranding					
		Habitat Availability					
		Competition					
	Disease					C. shasta and other diseases. Hatchery practices (example large smolt releases from IGH result in crowding)	Substantial % of the Klamath fish are infected with C. shasta (ALL)
	Cover						
	Predation						

Spring Chinook Voluntary Limiting Factors Analysis
Smolt in Salmon River

Life Stage	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=unlikely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
Smolt to the mainstem Klamath (Up to 14 months after emergence?)							
	Water Quality						
		Temperature	Olsen (1996)	Collect emigration data throughout the basin to assess time of emigration		Olsen indicates a large % of smolts emigrate in October, which is a time of cool temps. However, it would be good to re-assess the time of emigration utilizing screw traps (larger sample size) with efficiencies (for 2 emigration estimate).	
		suspended sediment/turbidity	need literature search	Assess recent impacts of substantially increased dredging activities	2	Increase in dredging during the past year	Currently restricted to the Lower Salmon, but potential to spread throughout the basin
		Other Constituents		We already know that gas, oil, etc are harmful to fish	2	Increase in dredging during the past year	Currently restricted to the Lower Salmon, but potential to spread throughout the basin
	Habitat	Flows (DM)					
	Predation				2		
	Disease				3		
	Stranding (PB)	see Fry			?		Are bathing dams a problem for type 2s? (NP,JS)

Spring Chinook Voluntary Limiting Factors Analysis
Fry

Life Stage Fry: April thru May (Emergence) to Smolt	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=unlikely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
				Need more info about dates			
	Rearing habitat	Cover	West 1991, West 1988, West 1990, ? available spawning abundance data; recent literature regarding importance of carcasses as nutrient supply. Dr. Bret Harvey RSL (US)	Review available USFS habitat survey information. Could conduct study to assess rearing habitat conditions and compare to literature criteria for optimal conditions.	1-2	West cites Olson (pers. Comm) "Other factors including presence of vegetative cover or woody cover, thermal refuge, and proximity to sediment free interstices may plan a role in rearing habitat importance. West notes less than optimal wood debris available (according to Sedell criteria)	Fish can be rearing for more than a year and cover may become a problem
		Food - lack of nutrients from lack of carcasses		Don't know much. Summarize available literature; could conduct studies to assess productivity (primary production and invertebrate production)	1-2	Recent literature clarifies importance of carcasses as nutrient supply, temperature could be limiting primary production	
		Habitat Availability		Analyze FS Habitat Surveys temporally	1-2	Sedell suggests minimum pool frequency & depth	
		Other					
			Tons of info, not specifically for Salmon R., and not for non-natives	How does it effect different types of Fry	2-3		Imbalanced natural predator presence, and some introduced predators (Chad)
	Predation	Habitat Complexity					
June - July	Stranding			ID annual stranding; Opp for using stranded fish for research	3	Freshets	

Spring Chinook Voluntary Limiting Factors Analysis
Fry

	Water Quality	Temperature	1980-2002 USFS/SRRC. available temperature data; McCullough 1999	I.d. temp conditions in locations known as rearing habitat (MSJ). Compare Salmon River fry required temperature regime to the literature; assess/model how temperature is affected by riparian canopy on the Salmon R. and Tribs (DH).	Reduction of riparian cover due to legacy of mining, harvest, fire (MSJ). Salmon River temps seem to be above optimal conditions, but not lethal. Could interact with available food supply to reduce growth (i.e. warmer temperature (up to about 21C require more, food, which may not be available)(McCullough). West notes "High summer water temperatures have long plagued the Salmon River. Riparian area damage suffered in the 1955 and 1964 floods was severe and most heavily damaged areas are recovering, but there are still problems. (West et al. 1990)." 1 (DH)/(FP+)	Temperatures in much of watershed exceed preferred rearing temps (MSJ)
		Dissolved Oxygen	2002 RWQCB	More info on C. shasta - signs of disease (health) @ screw trap	3	No an issue
	Disease		in Klamath		? C shasta and others	Not Known

Spring Chinook Voluntary Limiting Factors Analysis
Alevin to Fry

Life Stage (hatching November - January Emerging early April - late May)	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=unlikely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
	Spawning Gravel Quality - Redd Characteristics	Inability to emerge	temperature criteria technical workgroup report. West, 1991, states E. Fork volume of sediment = mean of 6%, S. Fork mean = 14%. Olson (1996) data indicates emergence of fry to average 13.4%, 14.5%, and 19.2% in the East Fork, Upper South Fork, and South Fork respectively - however given range of variability and small sample size, this could be re-evaluated. Salmon River Subbasin Restoration Strategy. Silver, Warren, Doudoroff 1963. Sant Sommerstrom www.cdec.water.ca.gov	use spawning channel as setting for study	1-2	redd capping due to sedimentation, temperature delaying or speeding emergence	
			Could use an updated, spatially distributed assessment of gravel sedimentation near primary spawning locations. DO measurements in Redds are needed for Salmon specifically		1-2	Reduces flow and oxygen to redds. Redds can become smothered with sediment. Roads and Fire have been identified as primary contributors of sediment to Salmon.	areas that are landslide prone or have chronic road problems, are more likely to contribute to this problem. If DO drops too much alevin will emerge from redds earlier than normal.
	Water Quantity	dewatering	www.cdec.water.ca.gov	look at rate of occurrence in relationship to precipitation, etc	3	flow can be effected by upslope management. Climatic fluctuations.	in upper extent of spawning reaches, dewatering of redds can be a problem - especially in years of high spring flow and low fall flows when adults are able to spawn far up into the wilderness

Spring Chinook Voluntary Limiting Factors Analysis
Alevin to Fry

		high flows	Silver, Warren, Doudoroff 1963, www.cdrec.water.ca.gov	look at rate of occurrence in relationship to precipitation, etc		2 scouring of the redds in winter and spring high water Natural flow regime and aspect can contribute to temperature variation. Very cold air/water in winter causes anchor ice to occur, leading to 1 mortality.	lower in system (Sawyers, Cecilville) and trbs (LNF, Knowmthing) are more at risk
Water Quality	Temperature	Temperature	1990-2002 USFS/SRRC 2002 RWQCB Silver, Warren, Doudoroff 1963	I.d. temp conditions in locations known as incubation habitat.		1	Temperature can delay or speed emergence.
		Dissolved oxygen				3	
	Predation (DM)						No know information on this subject
	Fry Mortality	entrainment superimposition	Griffith and Andrews 1981	search literature.		3 suction dredging 2 from fall chinook spawners	
		redd disturbance		needs further study		2 pedestrian traffic in river	low water river crossings (Mountain Lion Mine, Plummer, Jackass) pool tailouts, tanker fill sites.

Spring Chinook Voluntary Limiting Factors Analysis
Incubation

Life Stage Incubation	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=likely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
	Flow/oxygen	Sedimentation	West, 1991, states E. Fork volume of sediment = mean of 6%, S. Fork mean = 14%, Olson (1996) data indicates emergence of fry to average 13.4%, 14.5%, and 19.2% in the East Fork, Upper South Fork, and South Fork respectively - however given range of variability and small sample size, this could be re-evaluated	Could use an updated, spatially distributed assessment of gravel sedimentation near primary spawning locations	1-2	West (1990, page 13) states much granitic sand contributed between Petersburg and Big Flat	Potentially Upper South Fork and other areas
	Flow/oxygen Temperatures			Complete additional temperature data that is available (especially late September and October), Olson presents data from 1991-1994, and compare to the literature (McCullough, 1999)		Various literature summarized in McCullough (1999) indicates that mortality of eggs may occur at temps > 14 C, which may occur during the early weeks of incubation on the Salmon. Low temperature thresholds do not seem to be a problem, as long as initial incubation occurs at temps > 5C. Olson's study notes the extended incubation time for Salmon River spring chinook (> six months), which is natural.	
	Adequate Range		Olson 1996, Available temperature data; McCullough 1999	Complete/evaluate available temperature data; during coldest times of the winter, check for anchor ice near redd locations. Olson (1996, Figure 7) indicates anchor ice was not a problem from 1991-1995 in the Upper South Fork.	2-3	West states anchor ice may be a problem in some habitats - Olson's observations from 1991-1994 don't indicate this as a problem (however, one redd had no survival to fry stage).	
	Disease	Anchor ice	West 1991, Olson 1996		2-3		
	Disturbance of Redds	Scouring	See Felice's list of studies regarding the relationship of vegetation management and flows	Could conduct cross sections in redd zones to determine magnitude of flows required to scour redds	2-3	Removal of vegetation could alter hydrology so that the magnitude of winter flow events is increased	
		Disturbance from people, animals, vehicles			3	Given the remoteness of the country, and time of spawning, disturbance from people/eggs is likely minimal.	
		Superimposition	West 1991		3	In light of depressed populations and availability of spawning gravel (West 1991), this is not likely a problem.	
		De-watering	Redd distribution data	Ask redd surveyors if this is likely a problem	3		
			Compile temperature data for maturing adults in the Salmon River and Klamath Rivers: McCullough, 1999 (synthesis of literature regarding water temperature and salmonids)	Consult with literature and USGS regarding the relationship between temperatures that maturing adults are exposed to relative to egg viability.	1-2	exposure of adult females holding ripe eggs to temperatures above 14°C can cause egg mortality and delayed inhibition of alevin development (Rice 1960, Leifritz and Lewis 1976 as cited in McCullough, 1999). Olson's water temp data from 1991-1994 indicate ranging from 14-19 during August and September	
	Water Quality	Temperature	1990-2002 USFS/SRRC	14 temp conditions in locations known as incubation habitat.	1	Reduction of riparian cover due to legacy mining, harvest, fire	Temperatures in much of watershed exceed preferred incubation temps
		Dissolved Oxygen	2002 RWQCB		3		
		Turbidity/ Particulates (DM)				Flooding (DM)	
		Metals		Sample based on known mining and other toxic sites; Could it affect fish fecundity? Need literature search.	3	mercury contamination from historic mining (DH)	Not detected but may be a factor in localized sites

Spring Chinook Voluntary Limiting Factors Analysis
Spawning

Life Stage (Core Period: Sept. 15 - Oct. 15, Outer Limit: Sept. 15 - Nov. 1)	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=likely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
Spawning Habitat			USFS/SRRC surveys. West, 1991; West 1988 may address the East Fork, West 1990 may also address; West (1991; page 12) states lots of gravel available. Look at 97-98 data (BO)	need more locational spawning data - habitat inv., overlap with fall chinook	2		Above Blindhorse is a problem - seemed to be more fish than gravel could support in 2002. West (1990, page 12) states North and South Forks can support 3248 redds, while the East Fork can support 1182 redds - however, available spawning habitat does not infer adequate spawning habitat. West notes that spawning habitat use does not seem to be related to availability (page 12)
		Adequate Gravel					Not above Blindhorse
			West, 1991, states E. Fork volume of sediment = mean of 6%, S. Fork mean = 14%. Look at 97-98 data (BO)	Could use an updated, spatially distributed assessment of gravel sedimentation near primary spawning locations		West (1990, page 13) states much granitic sand contributed between Petersburg and Big Flat. Sedimentation from Taylor Ck - 1 management related	Blind Horse - East Fork may be embedded. Taylor Creek downstream for a few miles is embedded. Tribs may have unique problems - e.g. Methodist Ck is a sediment source
		Gravel too loose susceptible to scour	FS Report on scour chains (AI Olson) (RSL)		3	Mining tailings West 1991 states that the S. Fork does not meet Seddel's recommendations for woody debris, however likely to be more of a problem with fry/juvenile rearing Not just CWD - Veg, pools, etc (BO)	Site specific
		Proximity to cover	WAS. Habitat Surveys.	West 1988 (for East Fork of South Fork)	2-3	Scour potential in low flow years when fish are forced to spawn in mid channel	Entire Salmon River
		Quantity of flow	McDonald's Studies re: Base flows (AO)	begin to quantify hydrograph for eventual relationship to land management practices	3		Salmon R. Tribs utilization affected by flow availability

Spring Chinook Voluntary Limiting Factors Analysis
Spawning

Life Stage	Potential Limiting Factors	Subcategories for potential limiting factors	Available studies/information	Data/research Needs	Subjective opinion regarding likelihood of being a limiting factor (1=likely, 3 = unlikely)	Causes/Sources of Problems	Geographic reference/Comments
	Predation				3	Bears, Otters, Humans (DM, BO) reduction of riparian cover due to legacy of mining, harvest, fire (MSJ). Likely more of a problem for maturing adults and resultant affect on egg survival (DH).	More of a problem in Low Flow years
	Water Quality	Temperature	1980-2002 USFS/SRRC, www.critic.org/tech/EPAREport.htm	I.d. temp conditions in locations known as spawning habitat (MSJ) Examine Available Data for spawning dist. Spatially & Temporally (AO+)	2		Temperatures in much of watershed exceed preferred spawning temps, concern for temp related delay of spawning
		Other Constituents					
	Availability of mates spatially		Spawning ground survey data	Spatially analyze spawning ground survey data (redds and fish) to determine if a problem		In years with low population and low water. Unlikely, except years of extremely low abundance. Do spawning ground surveys indicate this as a problem (DH)?	
	Population size/genetics		Nelson and Soule (1987). Spawning ground abundance data and annual census surveys (with post survey mortality estimated; Banks (2000) genetic study	Genetic studies Look at information already collected for Salmon River Fish (PB+) Josh Israel @ UCD - interested in doing genetic research on S.R. genetics (NP)	1-2	Could be a problem in low abundance years; Nelson and Soule suggest a minimum population size of 100 adults may be necessary to prevent problems with inbreeding (DH).	Use NMFS protocol needs for collecting genetic samples for fish; Collect "Library" of genetics for different areas - will allow ID of ocean fish (JS) on NMFS website
	Cover/Holding water (DM)			Identify holding areas (DM)	3	weather, lack of shade/cover (DM)	